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Fire prevention and control



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FIRE PREVENTION AND CONTROL

What your site and employer should do for you

1. Undertake a fire risk assessment at the start of the project, review it as the project and risks on site change, and inform you of actions to take in the event of an emergency.
2. Display a fire action plan that details the actions you should take in the event of an emergency, the fire escape routes and fire assembly points.
3. Provide, maintain and test fire detection and fire-fighting equipment. Keep escape routes and fire exits clear of all obstructions and make sure they can be easily identified.
4. Have a system to control hot work, such as a hot-work permit.
5. Provide a secure storage place for gas cylinders, flammable liquids and materials.
6. Provide means to make sure rubbish and waste do not build up.
7. Provide and identify designated smoking areas, where applicable.

What you should do for your site and employer

1. Know what to do, and how to raise the alarm, if there is a fire.
2. Store materials and fuels in designated areas.
3. Keep exit routes and fire points clear at all times.
4. Practise good housekeeping and clear up your waste.
5. Know when and how to get a hot-work permit, if required.
6. Report anything you feel could be a fire risk (such as damaged electrical cables, hot lamps near combustible materials, and signs of arson).
7. Do not move fire extinguishers or signs from their designated points.
8. Do not smoke on site, unless there is a designated area where it is allowed.

Introduction

Fire kills and injures many people every year in the UK. On construction, demolition or refurbishment sites there can be a high risk of fire. Smoke and fire can spread rapidly and this risk can increase depending on the stage of the project.

How fire starts

For fire to start there must be three elements (the fire triangle).

1. Heat or ignition (such as a spark).
2. Fuel (something that burns).
3. Oxygen (air).



The fire triangle

Fighting fire

Fire feeds on fuel and oxygen. A fire can be put out by removing any one of the following.

- The heat or ignition source (cooling with water).
- The fuel (starving, for example, by turning off the gas supply).
- The oxygen (smothering with foam or a fire blanket).



A fire can start more easily than it can be stopped

Ignition and fuel sources

Fires need an ignition source: a form of heat that can set fire to flammable materials nearby. If rubbish is allowed to build up, or solvents and paints are left open, they will create a dangerous environment that could be set on fire by any of the following sources of ignition.

- Naked flames.
- Sparks from cutting activities.
- Overheating of power tools and electrical equipment.
- Gas or electric heaters.
- Smoking, or discarded matches or cigarettes.
- Overheating of lights (particularly halogen).

Bonfires are not allowed on site, unless the site has a permit.

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Emergency procedures, testing and controls

Your employer will tell you the following information at the site induction.

- Where the emergency assembly points are and how to get there safely in the event of a fire.
- How to raise the alarm.
- How to call the emergency services.
- Where you can smoke on site (if smoking is allowed).
- The day and time that fire alarm tests will take place.
- Who is trained to use fire-fighting equipment.
- Who the fire wardens and marshals are.
- Who to report fire risks, signs of arson and break-ins to.



An example of a good fire point on site



The emergency escape routes may change during the project, so you will need to regularly familiarise yourself with any new routes.

Hot works

Hot works can be any work where heat, sparks or naked flames are produced (such as welding, grinding or soldering).

If you are undertaking hot works you must work in accordance with the site rules. This often means obtaining a hot-work permit from your supervisor or site management before you start any work.

What a hot-work permit will tell you

- What you must do before you start any work, and when you can start work.
- How to prevent sparks, heat and flames from spreading.
- Which type of fire extinguisher you should have available and how many (often two will be needed).
- The site rules about maintaining a fire watch during the hot-work activity and for how long after the end of the hot works the fire watch must be maintained. (This is usually a minimum of one hour after hot work ends, but clients may set longer periods, depending on the risks involved.)
- When you must stop work towards the end of the working day to allow enough time for the fire watch to be carried out before the site is left overnight.



You should be informed of fire safety and evacuation procedures during your site induction (for example, the means of raising the alarm, what the fire alarm will sound like, when testing will take place and the location of fire-fighting equipment and fire assembly points).



If you hear the fire alarm (other than when it is a test), you must stop work and go to the fire assembly point immediately.

Highly flammable liquids and gases

Highly flammable liquids are those that can ignite at temperatures below 32°C.

When using these you must get out only the amount you need for the day and the liquids must be kept in a closed container. You should not work with flammable substances near naked flames or sparks, and spillages must be cleared up immediately.

Examples of highly flammable liquids include the following.

- Petrol.
- Thinners (for example, white spirit).
- Solvents.
- Adhesives.

Compressed gas must be kept in an upright position when being used, transported or stored.

Liquefied petroleum gas (LPG) should be stored in fireproof compounds or cages, which will stop vapours from building up in the event of a leak.

Compounds should have a level base, good ventilation and be surrounded by secure fencing.



Never store LPG cylinders below ground in cellars or basements.

Portable fire extinguishers

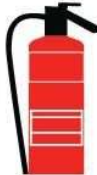
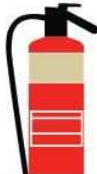
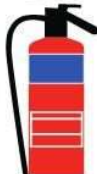


To minimise the need to use portable fire extinguishers, it is vital that everyone on site is vigilant and any hot work is controlled. Anyone who may need to use a portable fire extinguisher should be trained and competent to do so.



205-litre diesel drum fitted with safe extraction equipment

FIRE PREVENTION AND CONTROL

As a guide, the table below shows the types of portable fire extinguisher and the types of fire they can be used on. Choosing the wrong fire extinguisher can increase the risk to the person operating the extinguisher, and those in the surrounding area.

Extinguishing medium	Colour of panel	Where not to use
Water: for wood, paper, textile and solid material fires	Red 	Do not use on liquid, electrical or metal fires
Foam: for liquid fires	Cream 	Do not use on electrical or metal fires
Powder: for liquid and electrical fires Specialist dry powders: for metal fires	Blue 	Do not use on metal fires unless M28 or L2 text is printed on extinguisher, which means it is suitable for metal fires
Carbon dioxide: for wood, paper, textiles, gaseous, liquid and electrical fires	Black 	Do not use on metal fires
Wet chemical: for wood, paper, textile, cooking oil and solid material fires	Yellow 	Do not use on liquid, gas or electrical fires

Note: dry powder extinguishers may be provided as well as, or substituted for, water, foam or carbon dioxide extinguishers. Extinguishers used to control Class B fires (flammable liquids) will not work on Class F fires (cooking oils) because of the high temperatures produced.

Fire extinguishers should only be used on small fires (as a guide, no bigger than a wastepaper bin) or to aid escape.



If you have to leave the location of the fire to raise the alarm, do not return – continue your own evacuation. Fires can spread quickly.